

to be the young of the great Newfoundland Cod : it was in vain that I pointed out the generic difference in the number of the fins, &c., and that these supposed young were adult ; the " practical men " carried conviction so far with them, that the merchants of the town subscribed some hundreds of pounds, twice, to fit out a vessel to commence a great cod-fishing, on a supposed cod-bank a few miles out, as a mercantile speculation. The Dory (*Zeus Faber*) is a rare visitant, but whether as delicious here as in Europe I cannot say, although a party of my scientific friends actually ate one of the three specimens I have known to occur during the seven years I have been in the colony, instead of sending it to the Museum. A Guard-fish (*Hemirhamphus*), a Tunny (*Thynnus*), and an Eel (*Muraena*) are also commonly used for food. Amongst useful fishes not good for food, I may mention the common European Sunfish (*Orthogoriscus Mola*) as not uncommonly caught in the Bay, for its large supply of oil.

Of Crustacea few kinds are used for food in Victoria : there are no true Lobsters and no Crabs (*Canceridæ*) fit for the table ; but a spiny Crayfish of about the same size and shape as the English species is very common at the Heads, and is supplied abundantly to the market : it is nearly identical with the *H. annulicornis*. The gigantic Murray River Crayfish (the *Astacoides serratus*) is now sent down alive in great numbers to the market for the table. The smaller River Crayfish (the *Astacoides quinquecarinatus*) is also often eaten in the country, but is not sent to market ; it forms the chief food of the so-called " Murray Cod," from the stomach of one of which I took twenty nearly perfect.

Melbourne University, 30th September, 1861.

XVIII.—*On some new Species of Cylichnidæ, Bullidæ, and Philinidæ, from the Seas of China and Japan.* By ARTHUR ADAMS, F.L.S. &c.

GENUS CYLICHNA, Lovén.

1. *Cylichna japonica*, A. Adams.

C. testa cylindracea, rimato-umbilicata, epidermide fusca tenui sæpe obtecta, utrinque rotundata, apice perforato, transversim tota subtilissime striata, striis antice distantioribus ; apertura lineari, antice dilatata ; labio tenui, elongato, simplici ; labro margine vix recto, postice valde producto et rotundate angulato.

Hab. Korea Strait ; 46 fathoms.

Next to *C. arachis*, Quoy, which was likewise obtained in the

Korea Strait, this is the largest species of *Cylichna*; it differs from that species in being more elongated and less robust, and in the angle of the outer lip being produced and angulated, extending considerably beyond the apex.

2. *Cylichna proxima*, A. Adams.

C. testa ovato-cylindræa, utrinque rotundata, alba, solida, nitida, subopaca, transversim tota minutissime striata, apice profunde umbilicato; apertura lineari, in medio constricta, antice dilatata; labio plica crassa obliqua instructo; labro in medio recto, antice arcuato, postice subproducto rotundato.

Hab. Tsu-Sima; 26 fathoms.

Resembles *C. Sarsii*, Phil.; but the aperture is constricted in the middle; it is also like *C. concinna*, A. Adams, but is stouter and not produced anteriorly, and the angle of the outer lip is rounded.

3. *Cylichna venustula*, A. Adams.

C. testa ovato-cylindræa, utrinque subangustata, alba, solidula, nitida, transversim tota subtilissime striata, apice perforato; apertura lineari, antice dilatata; labio arcuato, plica obliqua instructo, antice vix truncato; labro margine regulariter arcuato.

Hab. Mino-Sima; 63 fathoms.

Has the form of *C. alba*, Brown, and the sculpture of *C. concinna*, but differs from the latter in being more robust, and in the inner lip being furnished with a distinct oblique plait.

4. *Cylichna rimata*, A. Adams.

C. testa ovato-cylindræa, rimato-umbilicata, alba, tenui, nitida, utrinque striata, apice perforato; apertura lineari, antice acuminata, producta, rima umbilicali lata; labio tenui, arcuato, simplici; labro postice producto, rotundato; margine rectiusculo.

Hab. Korea Strait; 46 fathoms.

Most like *C. umbilicata*, Mont.; but the last whorl is not acuminate posteriorly, the aperture is produced in front, and the inner lip is long and arcuated.

5. *Cylichna latiuscula*, A. Adams.

C. testa parva, ovato-cylindrica, antice acuminata, postice latiore, rimato-umbilicata, alba, tenui, lævi, nitida, apice profunde perforato; apertura angusta; labio tenui, simplici, arcuato; labro postice producto, late rotundato.

Hab. Tabu-Sima; 25 fathoms.

Most like *C. rimata*, A. Adams, but is shorter and much wider

posteriorly, and the angle of the outer lip is more rounded ; it wants, moreover, the transverse striæ at each end.

6. *Cylichna lepidula*, A. Adams.

C. testa cylindræcea, nivca, solida, nitida, polita, in medio vix angustata, postice truncata, apice vix perforato ; periomphalo acuto ; apertura lineari ; labio calloso, plica valida, distincta ; labro margine inflexo.

Hab. Tsu-Sima ; 26 fathoms.

This species differs from all others described, in the periomphalus, or hind part of the body-whorl enclosing the sunken apex, forming an acute well-defined ridge. It is a small, white, highly polished, opaque shell.

7. *Cylichna consobrina*, A. Adams.

C. testa cylindræceo-ovata, vix rimata, alba, solidula, longitudinaliter striata, utrinque striata, striis distantibus ; apertura angusta ; labio antice valde plicato ; labro subarcuato.

Hab. Mino-Sima ; 63 fathoms.

Most like *C. rimata*, but is more solid, longitudinally striated, and wants the conspicuous umbilical fissure of that species.

8. *Cylichna parallela*, A. Adams.

C. testa cylindræcea, rimata, albida, solidiuscula, utrinque striata, longitudinaliter strigosa ; anfractu ultimo lateribus parallelis ; apertura lineari, antice producta ; labio callo reflexo rimam tegente ; labro margine recto, postice producto et angulato.

Hab. Tsu-Sima ; 16 fathoms.

Most nearly resembles *C. involuta*, A. Adams ; but the aperture is produced and pointed anteriorly, the sides of the body-whorl are nearly parallel, and the outer lip forms posteriorly a produced angle.

9. *Cylichna assimilis*, A. Adams.

C. testa cylindræcea, sordide alba, solida, breviuscula, postice truncata, dilatata, antice acuminata, sub lente obsolete tota transversim striata ; apertura lineari ; labio incrassato, plica evanida ; labro margine rectiusculo, postice subproducto et rotundato.

Hab. Mino-Sima ; 63 fathoms.

A small species, somewhat resembling *C. involuta*, A. Adams, but much shorter, dilated behind, narrowed in front, and with the hind angle of the outer lip rounded.

10. *Cylichna pumila*, A. Adams.

C. testa parva, alba, tenui, ovato-cylindracea, in medio subconstricta, utrinque rotundata, longitudinaliter substriata; apertura latiuscula; labio tenui, arcuato, simplici; labro margine in medio inflexo.

Hab. Tsu-Sima; 16 fathoms.

A small, thin, elongate-oval species, somewhat contracted in the middle. It is very unlike any other hitherto described.

11. *Cylichna candidula*, A. Adams.

C. testa cylindracea, alba, transversim tota confertim striata, postice subtruncata, antice producta et subacuminata; apertura lineari; labio subincrassato, antice obsolete uniplicata; labro margine in medio rectiusculo, postice vix producto, rotundato.

Hab. Tsu-Sima; 26 fathoms.

This species partakes of the character of *C. venustula* and *concinna* with regard to sculpture and general appearance, but is elongated and cylindrical.

12. *Cylichna inedita*, A. Adams.

C. testa cylindracea, postice subtruncata, antice acuminata, alba, tenui, longitudinaliter strigosa; apertura lineari, antice producta; labio elongato, flexuoso; plica parietali conspicua; labro margine recto, postice subproducto, rotundato.

Hab. Mino-Sima; 63 fathoms.

A small, thin, strigose species, with the aperture anteriorly produced, and with an elongate subspiral fold at the fore part of the inner lip.

GENUS TORNATINA, A. Adams.

In addition to the two species of this genus described below, I have obtained, by deep-water dredging, *T. voluta*, Quoy and Gaim.; *T. olivula*, A. Adams; *T. pusilla*, Pfeiff.; *T. simplex*, A. Adams; *T. planospira*, A. Adams; *T. fusiformis*, A. Adams; *T. gracilis*, A. Adams; and *T. truncata*, J. Adams; some of which have also occurred in the Yellow Sea.

1. *Tornatina delicatula*, A. Adams.

T. testa cylindraceo-ovata, alba, tenui, nitida, spira truncata, apice mammillato, longitudinaliter substriata; apertura lineari, antice

dilatata; labio plica obliqua conspicua; labro margine vix arcuato.

Hab. Mino-Sima; 63 fathoms.

In the obtuse subtruncate spire and papillary apex, this species resembles *T. pusilla*, Pfeiff.; but it is longer and more slender, and the aperture is more produced anteriorly.

2. *Tornatina succincta*, A. Adams.

T. testa cylindracea, in medio coarctata, vertice truncato, alba, longitudinaliter tota striata, transversim fasciata, fasciis pallidis subdistantibus; apertura lineari, in medio angustata, antice dilatata; labio obsolete plicato.

Hab. Tsu-Sima; 16 fathoms: Awa-Sima; low water.

In form this species most resembles *T. truncata*, J. Adams; but it is more elongated and much narrower, and marked with indistinct pale bands; the whorls of the spire are visible, but sunken, and the parietal plica is not conspicuous.

Genus VOLVULA, A. Adams.

The animal of this little genus, described by me in 1850, but which is not generally known to conchologists, has hitherto eluded our researches. The shells are only obtained by deep-water dredging, but, judging from their form, sculpture, colour, and texture, appear to belong to the family Cylichnidæ. During the voyage, I have obtained all the species hitherto described, including *V. mucronata*, Phil., and *V. angustata*, A. Adams, from the China Sea, and *V. striatula*, *eburnea*, and *rostrata*, A. Adams, from the Sea of Japan. *V. acuminata*, Brug., the type of the genus, is called an *Ovulum* by Hanley, and is an inhabitant of the British seas. I now give brief diagnoses of six new species.

1. *Volvula opalina*, A. Adams.

V. testa elongato-ovali, rimata, alba, semipellucida, lævi, nitida, antice obsolete transversim striata, mucrone brevi in angulo producto labri incluso; apertura angusta; labio tenui, obliquo, incurvato; labro regulariter arcuato.

Hab. Mino-Sima; 63 fathoms.

2. *Volvula spectabilis*, A. Adams.

V. testa elongato-ovali, postice acuminata, antice rotundata, mucrone brevi non producto, tenuicula, alba, nitida, minutissime transversim striata; apertura medioeri; labio tenui, elongato, vix flexuoso; labro regulariter arcuato.

Hab. Tabu-Sima; 25 fathoms.

3. *Volvula cylindrella*, A. Adams.

V. testa cylindraco-ovata, utrinque obtusa, transversim tota striata, striis confertis, mucrone brevi acuto non producto; apertura lineari; labio subtortuoso; labro margine rectiusculo.

Hab. Mino-Sima; 63 fathoms.

4. *Volvula ovulina*, A. Adams.

V. testa elongato-ovali, subventricosa, transversim tota striata, umbilicata, antice gibbosa, mucrone parvo acuto in angulo producto labri incluso; apertura lata; labio tortuoso, elongato, antice late reflexo; labro regulariter arcuato.

Hab. Mino-Sima; 63 fathoms.

5. *Volvula radiola*, A. Adams.

V. testa subcylindraco, utrinque acuminata, mucrone producto, acuta, alba, opaca, transversim tota striata, striis distantibus; apertura lineari, antice dilatata; labio obliquo, recto, subincrassato; labro margine recto.

Hab. Tabu-Sima; 25 fathoms.

6. *Volvula attenuata*, A. Adams.

V. testa ovato-cylindraco, utrinque angustata, transversim tota striata, striis distantibus, mucrone acuto producto; apertura lineari, antice vix dilatata; labio subtortuoso, obliquo; labro margine subarcuato.

Hab. Tsu-Sima; 26 fathoms.

Genus HAMINEA, Leach.

Besides the three new species of this genus which I am about to describe, the following were also obtained from the Sea of Japan:—*H. rotundata*, A. Adams; *H. brevissima*, A. Adams; *H. pygmæa*, A. Adams; and *H. succinea*, Conrad.

1. *Haminea fulgida*, A. Adams.

H. testa elongato-cylindraco, alba, tenui, nitida, subpellucida, utrinque rotundata, transversim tota striolata, striolis minutissimis confertis; apertura angusta, antice dilatata; margine columellari acuto, arcuato; labro rectiusculo, postice producto et angulato.

Hab. Shan-tung (Kala-hai).

This is a beautiful white, shining, semipellucid species, most like *H. curta*, A. Adams, but more elongate and narrower, and engraved with very fine close-set transverse striolæ.

2. *Haminea lucida*, A. Adams.

H. testa cylindraco-ovata, vix rimata, utrinque rotundata, diaphana, vitrea, transversim tota striata, striis minutissimis confertis; aper-

tura angusta, antice producta; margine columellari tenui, arcuato; labro postice rotundato.

Hab. Gulf of Lian-tung; Hulu-Shan Bay.

Like *H. brevissima* and *pygmæa*, A. Adams. An examination of the animal shows it to belong to *Haminea*, the genus which in all probability includes its above-named congeners. In my Monograph of the family (Sow. Thesaurus, *Bulla*), they are arranged under *Cylichnidæ*.

3. *Haminea strigosa*, A. Adams.

H. testa cylindraceo-ovata, utrinque rotundata, alba, nitida, subopaca, transversim tota minutissime striolata, longitudinaliter strigosa; apertura angusta, antice dilatata; margine columellari simplici, arcuato; labro recto, postice producto et rotundato.

Hab. Tabu-Sima; 25 fathoms.

White, with longitudinal slightly raised streaks, and entirely transversely striated. In form it resembles *H. lucida*, A. Adams; but the aperture is rounded anteriorly, and not produced as in that species.

GENUS SCAPHANDER, Montfort.

Five species only of this limited genus have hitherto been described from Europe and America; and I now add brief diagnoses of six Asiatic species found by myself in the Sea of Japan. The shells, except to a person well acquainted with the family, might be mistaken for species of *Philine*, but are known by their distinct though sunken spire. They are also, being external shells, stronger and more distinctly sculptured; whereas the species of *Philine* are thin, more simple, and contained within the mantle of the animal.

1. *Scaphander japonicus*, A. Adams.

S. testa ovata, elongata, postice angustata, sordide alba, transversim sulcata, sulcis subconfertis puncticulatis; spira occulta; apertura postice coarctata, antice dilatata; labio tenui; labro postice producto et obtusim angulato, antice rotundato; margine regulariter arcuato.

Hab. Mino-Sima; 63 fathoms.

The punctate striæ are common to most of the species of this genus. The present species nearly resembles *S. lignarius* in form, but is much smaller (only half an inch long); it is also less ventricose, and the transverse grooves are puncticulate.

2. *Scaphander Cumingii*, A. Adams.

S. testa oblongo-ovata, postice constricta, albida, transversim oblique

sulcata, sulcis confertis puncticulatis; apertura ampla, postice valde coarctata, antice dilatata et vix effusa; labio elongato, externe subreflexo; labro postice producto et acute angulato; margine postice inflexo, antice crenulato.

Hab. Mino-Sima; 63 fathoms.

Differs from *S. japonicus*, which it equals in size, in the last whorl being posteriorly constricted, in the close-set oblique grooves, in the narrowness of the last whorl, and in the acute hind angle of the outer lip.

3. *Scaphander elongatus*, A. Adams.

S. testa tenui, alba, elongato-ovata, utrinque angustata, transversim sulcata, sulcis distantibus, punctatis; apertura antice producta et dilatata, postice coarctata; labio tenui; labro margine regulariter arcuato.

Hab. Mino-Sima; 63 fathoms.

This species is elongate and narrowed at both ends, and the punctate grooves are wide apart. The spire of this and of all the other species is "truncata umbilicata," or "occulta."

4. *Scaphander sulcatus*, A. Adams.

S. testa elongato-ovata, solidiuscula, postice angustata, fulvescente, nitida, transversim sulcata, sulcis simplicibus, distantibus; apertura postice coarctata, antice dilatata; labio simplici; labro margine regulariter arcuato.

Hab. Korea Strait; 46 fathoms.

This is a small, smooth, rather solid species, transversely sulcate; the grooves fine, simple, and more strongly marked at the posterior extremity.

5. *Scaphander Sieboldii*, A. Adams.

S. testa parva, oblonga, alba, subtenui, postice coarctata, in medio gibbosula, transversim sulcata, sulcis distantibus, punctatis; apertura ampla, antice valde dilatata, postice angusta; labio postice reflexo, antice tenui arcuato; labro margine vix recto, postice producto et valde angulato.

Hab. Tsu-Sima; 26 fathoms.

The only species at all resembling this is *S. pectinatus*, from which, however, it differs greatly; it is very loosely convolute, and the last whorl is gibbose in the middle.

6. *Scaphander dilatatus*, A. Adams.

S. testa ovata, postice angustata, laxe convoluta, alba, tenui, transversim striata, striis crebris, simplicibus; spira parva; apertura ampla, postice angusta, antice valde dilatata; labio tenui; labro

margine regulariter arcuato, postice producto et acute angulato.

Hab. Tsu-Sima; 26 fathoms.

This is a slightly convolute, thin, oblong species, with the transverse lines waved but not punctate, and the aperture greatly dilated.

Genus ATYS, Montfort.

This genus is one of the many good ones established by Denys de Montfort, who also gave us *Scaphander*, *Trophon*, *Phos*, and *Typhis*, and who did his best to illustrate his work by engravings of his own, which are certainly rude and not always accurate. For the better understanding of the genus, I have thrown my Japanese and Chinese species into subordinate but, I think, convenient groups.

Subgenus ATYS, Montfort.

Testa ventricosa, transversim striata.

1. *Atys amphorella*, A. Adams.

A. testa ovoidea, ventricosa, in medio gibbosa, rimata, tenui, lævi, nitida, luteola, antice angusta, postice subacuminata; labio subrecto, antice vix truncato; labro arcuato, postice producto, tortuoso, rotundato.

Hab. Lo-shan-kow; Shan-tung.

Atys tortuosa, A. Adams, is the nearest approach to this species, which, however, is not striated, and the outer lip has not the spiral twist so conspicuous in that species. My Chinese species is shaped like a little fat *Amphora*.

2. *Atys scrobiculata*, A. Adams.

A. testa ovoidea, ventricosa, postice angustata, antice acuminata, sordide alba, late et profunde umbilicata; umbilici margine angulato; apertura utrinque valde producta; margine columellari recto, simplici, antice rotundato.

Hab. Tabu-Sima; 25 fathoms.

The only shell which resembles this singular little species is *A. tortuosa*, A. Adams; but the great peculiarity of the aperture, which is pointed at both ends and produced beyond the body-whorl, distinguishes it from all others.

Subgenus ROXANIA, Leach.

Testa solida, ovoidea, transversim lineato-punctata.

3. *Roxania punctulata*, A. Adams.

R. testa ovoidea, solida, perforata, utrinque rotundata, decussatim

striata, transversim profunde sulcata, sulcis valde punctatis; apertura angusta, antice dilatata; labio recto, antice truncato; labro postice producto, rotundato.

Hab. Mino-Sima; 63 fathoms.

No species hitherto described resembles this: the nearest approach to it is *R. Cranchii*, Leach. *R. insculpta*, Totten, is sculptured rather like it. The shell is solid, very strongly punctate-striate, and deeply umbilicated; and the inner lip is truncate anteriorly.

Subgenus ALICULA, Ehrenberg.

Testa subcylindracea, transversim striata.

4. *Alicula translucens*, A. Adams.

A. testa cylindraceo-ovata, tenui, pellucida, utrinque transversim striata, striis distantibus, area intermedia glabra; apertura angusta; labio recto, antice truncato; labro margine in medio rectiusculo, postice tortuoso et producto, antice crenulato.

Hab. Port Hamilton; 10 fathoms (mud).

This species most nearly resembles *Alicula succisa*, Ehrenberg, from the Red Sea, but is narrower and more cylindrical in form, and is thin and nearly transparent.

5. *Alicula secalina*, A. Adams.

A. testa cylindraceo-ovata, rimata, apice subtruncato vix perforato, cornea semiopaca, transversim tota striata, striis distantibus in medio obsoletis; apertura lineari; labio obliquo, subincrassato; labro in medio rectiusculo.

Hab. Tsu-Sima; 25 fathoms.

This is a small, grain-like, horn-coloured species, with the apex small and truncate, and the outer lip hardly produced beyond it.

6. *Alicula volvulina*, A. Adams.

A. testa cylindraceo-ovata, rimata, utrinque acuminata et transversim striata, striis distantibus, alba, tenui, opaca, nitida; apertura angusta; labio obliquo flexuoso, antice incrassato; labro regulariter arcuato.

Hab. Tsu-Sima; 26 fathoms.

A little white shining species, acuminate at both ends, like a *Volvula*, but with the sunken spire and twisted outer lip of an *Alys*.

Subgenus SAO, H. & A. Adams.

Testa pyramidata aut pyriformis, postice attenuata, antice gibbosa.

7. *Sao folliculus*, A. Adams.

S. testa obovata, umbilicata, solidula, basi dilatata, gibbosa, lævi, postice transversim striata, apice profunde perforato; apertura antice dilatata, postice angusta; labio incrassato; labro postice valde producto et acuminatè angulato.

Hab. Tabu-Sima; 25 fathoms.

The only species resembling this is *S. pyriformis*, A. Adams, from the China Sea; but that species is much more ventricose, and more attenuated posteriorly.

8. *Sao phiala*, A. Adams.

S. testa cylindrico-pyramidali, antice attenuata, infra periomphalum subconstricta, rimata, utrinque transversim striata; vertice profunde perforato; apertura lineari, postice coarctata, antice dilatata; labio recto, elongato, simplici; labro postice valde producto.

Hab. Mino-Sima; 63 fathoms.

The peculiar contraction at the anterior part of the body-whorl just below the apex, the produced angle of the outer lip, and the straight simple inner lip are the chief peculiarities of this species.

9. *Sao elliptica*, A. Adams.

S. testa parvula, alba, tenui, elongato-ovata, antice subdilatata, longitudinaliter strigosa, utrinque transversim striata; apertura lineari, antice dilatata; labio recto, in medio calloso; labro margine arcuato, postice producto, rotundato.

Hab. Tsu-Sima; 16 fathoms.

A small, white, longitudinally strigose, ovate species, differing in form and appearance from any other of the group.

GENUS PHILINE, Ascanius.

1. *Philine scalpta*, A. Adams.

P. testa oblongo-ovata, alba, tenui, semipellucida, longitudinaliter subplicata, plicis irregularibus, lineis transversis exaratis undulatis distantibus insculpta; apertura ampla; margine columellari tenui, acuto; labro regulariter arcuato, postice rotundato.

Hab. Tsu-Sima; 30 fathoms: Korea Strait; 46 fathoms.

Bulla exarata, Ph., or *Haminea sinensis*, A. Adams, is the only species resembling this in sculpture; but the form is very different: the body-whorl in that species is large, and the outer lip narrowed posteriorly and greatly produced.

2. *Philine crenata*, A. Adams.

P. testa ovata, alba, solidiuscula, postice subangulata, transversim

valde sulcata, sulcis transversim excavato-punctatis, eorum marginibus crenatis; apertura dilatata; margine columellari antice oblique truncata; labro semicirculari, postice parum producto et rotundato.

Hab. Tsu-Sima; 30 fathoms: Korea Strait; 46 fathoms.

No species has been described resembling this, which is nearly as large as *P. Coreanica*. The edges of the transverse grooves are conspicuously erenate, and the puncta or pits are transversely oblong.

3. *Philine acutangula*, A. Adams.

P. testa subquadrato-ovata, alba, tenui, postice subtruncata, transversim sulcata, sulcis excavato-punctatis; anfractu ultimo lateribus subparallelis; apertura aperta; labro margine semicirculari, angulo ejus postice incurvato, producto et acuto.

Hab. Gulf of Lian-tung; Hulu-Shan Bay.

The nearest approach to this species is *Ph. scutulum*, Lovén; but the produced sharp hind angle of the outer lip will serve readily to distinguish it.

4. *Philine striolata*, A. Adams.

P. testa parva, ovata, alba, tenui, semipellucida, postice rotundata, longitudinaliter plicata, transversim striolata, striolis confertis, subtilissimis; apertura dilatata; margine columellari arcuato; labro regulariter semicirculari, postice producto, rotundato.

Hab. Tsu-Sima; 30 fathoms.

In form this little species most nearly approaches *Bullæa pruinosa*, Clark, from the British Seas; but in sculpture it is entirely different, being very finely transversely striated.

Shanghai, China,
May 15, 1861.

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THAT an intimate connexion should exist between the chase and the study of natural history is not surprising. From the time when the conqueror of Arbela bade the Nimrods and Gordon-Cummings of his generation bring their hunting trophies and experiences to the Stag-ryte sage, this connexion seems to have lasted down to our own day, which has seen the works of Mr. A. E. Knox and the late Mr. Charles St. John—men whom one hardly knows whether to regard as scientific sportsmen or sporting men of science. To such a class